

ABSTRACT

The present invention is directed to a sparger system provided for appropriately feeding reactant streams to fluidized bed reactors of hydrocarbon partial oxidation processes that are retrofitted to selectively recover and recycle unreacted hydrocarbons. As a result of the sparger system, the reactor productivity and selectivity is enhanced while employing only two spargers. Also, the capital cost required for retrofitting existing sparging equipment is minimized, while at the same time, the desired fluidization and catalyst oxidation characteristics are achieved without the formation of flammable mixtures within the sparging system.